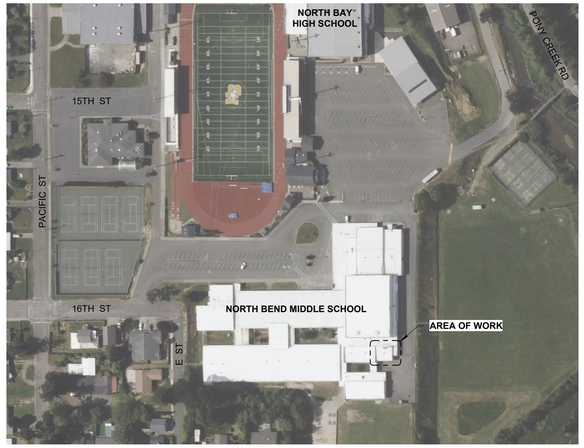
NORTH BEND SCHOOL DISTRICT - BOILER REPLACEMENT

SITE MAP - NORTH BAY ELEMENTARY
N.T.S.



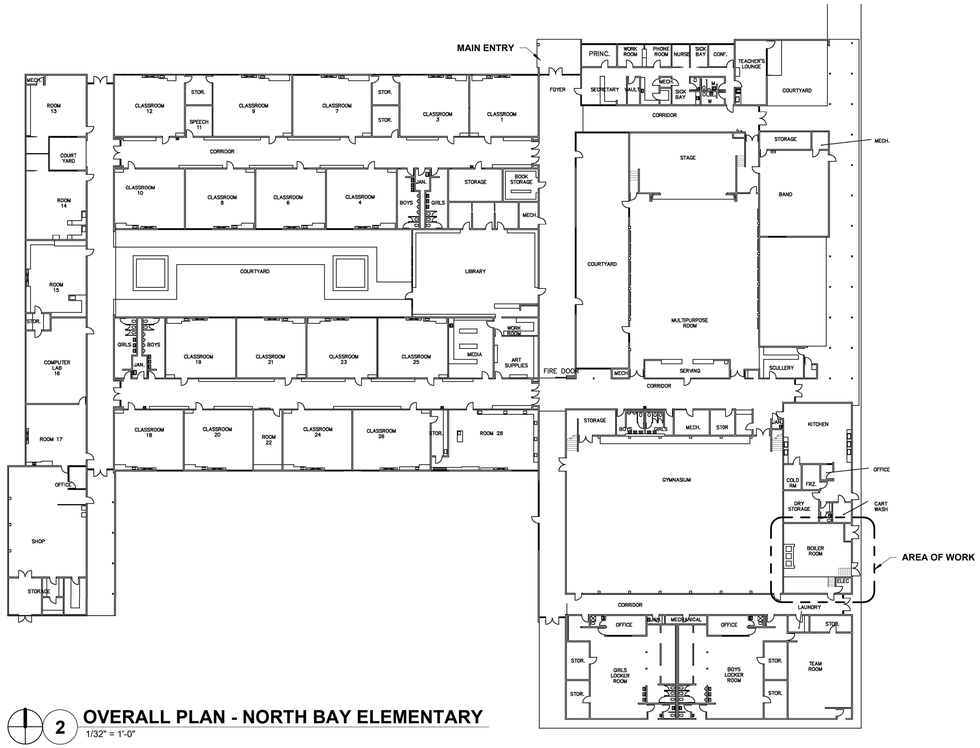
SITE MAP - NORTH BEND MIDDLE SCHOOL
N.T.S.

VICINITY MAP
N.T.S.

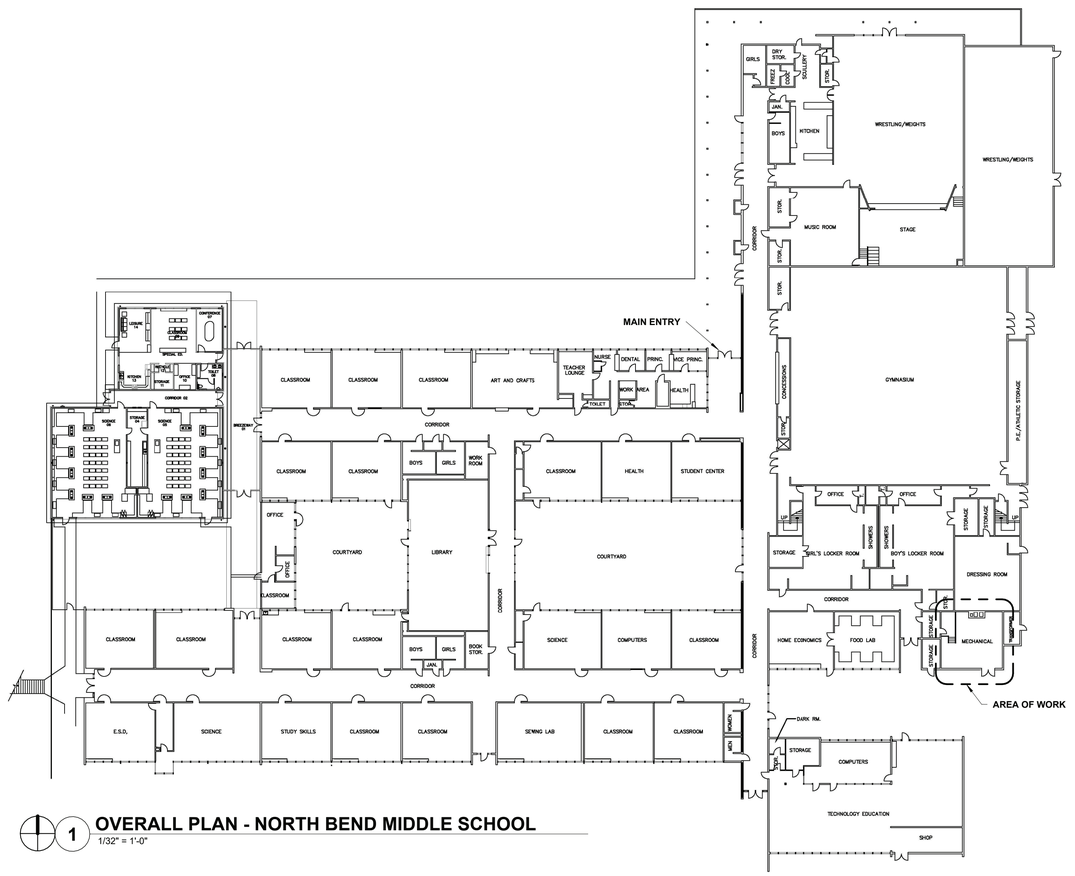
NORTH BAY ELEMENTARY SCHOOL
93670 VIKING LANE #1
NORTH BEND, OR 97459

NORTH BEND MIDDLE SCHOOL
1500 16TH ST
NORTH BEND, OR 97459

SHEET INDEX



2 OVERALL PLAN - NORTH BAY ELEMENTARY
1/32" = 1'-0"



1 OVERALL PLAN - NORTH BEND MIDDLE SCHOOL
1/32" = 1'-0"

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
general@hge1.com
www.hge1.com

REGISTERED ARCHITECT
2840
JOSEPH A. SLACK
COOS BAY, OREGON
STATE OF OREGON

PROJECT NO.: **24.069**

NORTH BEND SCHOOL DISTRICT
BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST, NORTH BEND, OR 97459

BIDDING

REVISIONS:

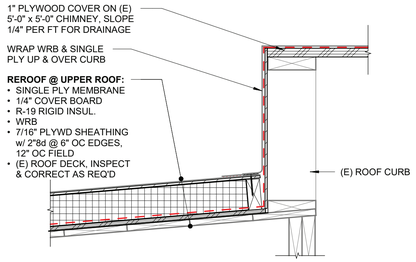
#	DATE	DESCRIPTION

DATE: APR 2025

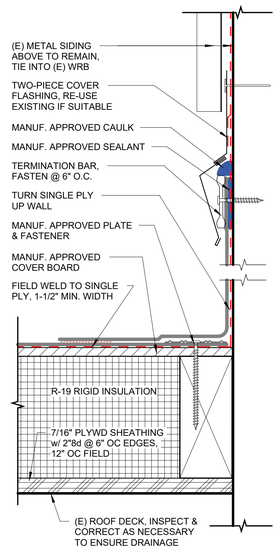
SHEET TITLE:
COVER SHEET

G0.0

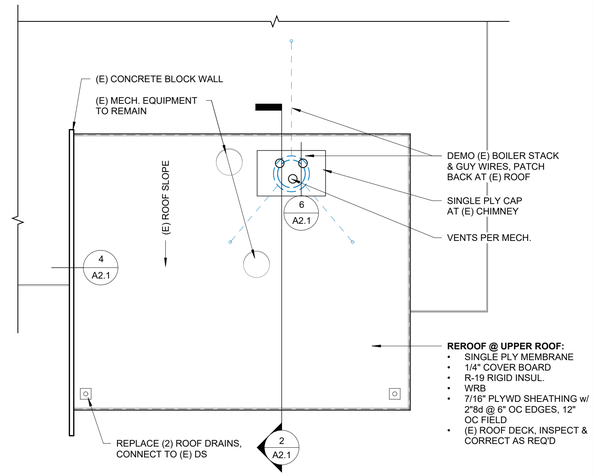
4/29/2025 9:12:48 AM H:\Architecture\Jobs\North Bend Schools\24.069 North Bend - Middle & Elementary Boiler Replacement\1 Drawings\7_CAD & Revit\NBSD Boiler Replacement.rvt



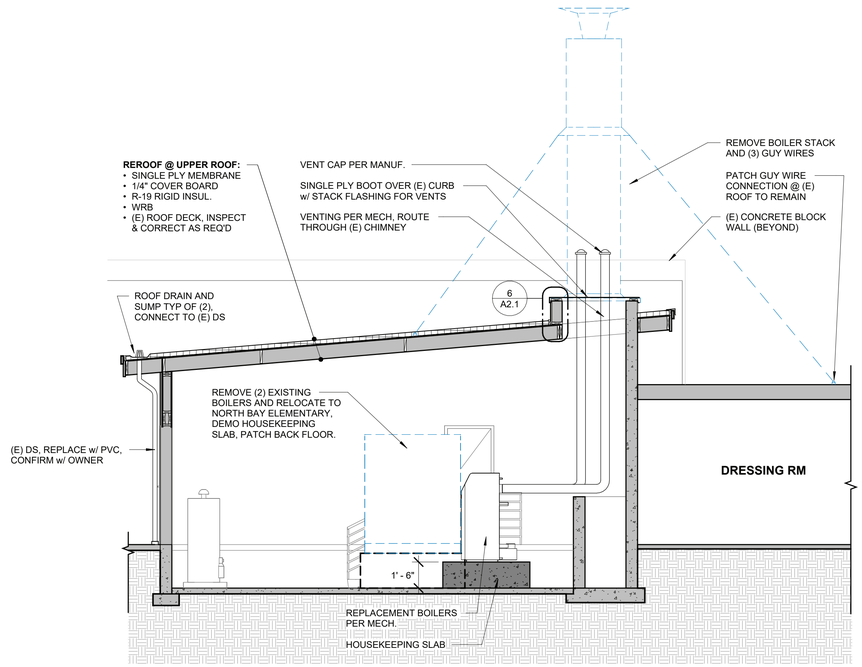
6 ROOF & CHIMNEY VENT CAP
1 1/2" = 1'-0"



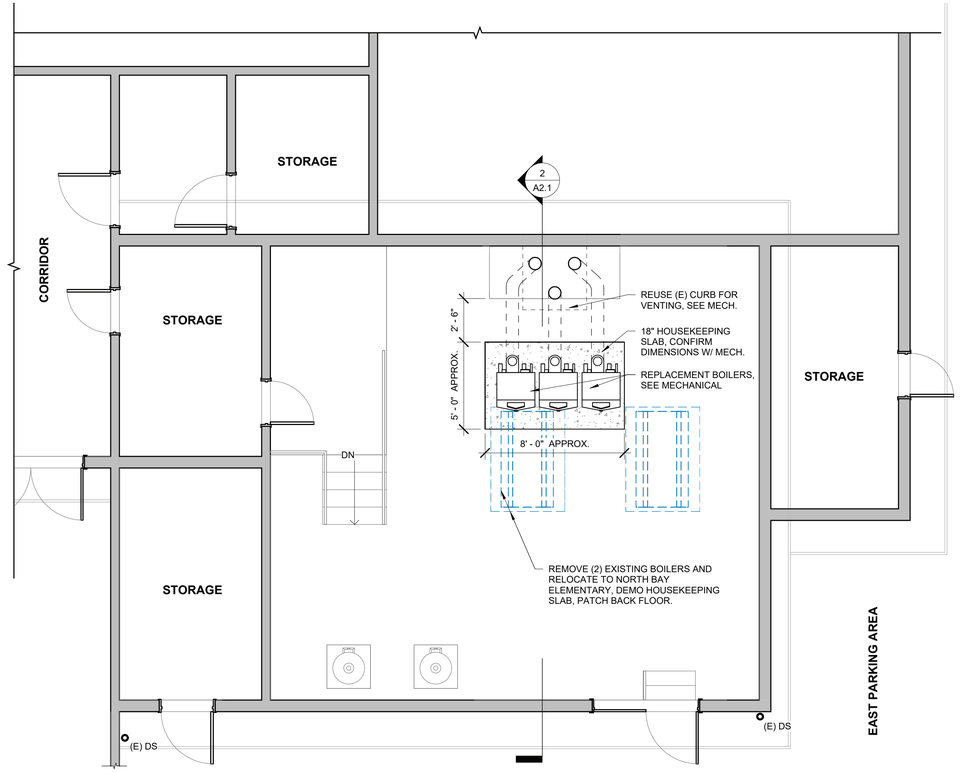
4 SINGLE PLY @ WALL
6" = 1'-0"



3 ROOF PLAN - NORTH BEND MIDDLE SCHOOL
1/8" = 1'-0"



2 BOILER RM SECTION - NORTH BEND MIDDLE SCHOOL
1/4" = 1'-0"



1 FLOOR PLAN - NORTH BEND MIDDLE SCHOOL
1/4" = 1'-0"

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
genera@hge1.com
www.hge1.com

REGISTERED ARCHITECT 2840 JOSEPH A. SLACK COOS BAY, OREGON STATE OF OREGON

PROJECT NO.: **24.069**

NORTH BEND SCHOOL DISTRICT BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST, NORTH BEND, OR 97459

BIDDING

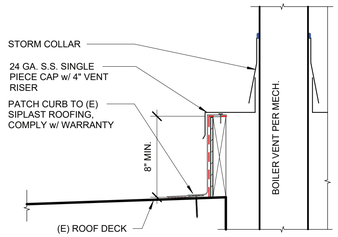
REVISIONS:

#	DATE	DESCRIPTION

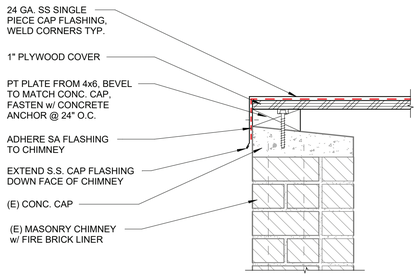
DATE: APR 2025

SHEET TITLE:
OVERALL, DEMO, & FLOOR PLANS - MIDDLE SCHOOL

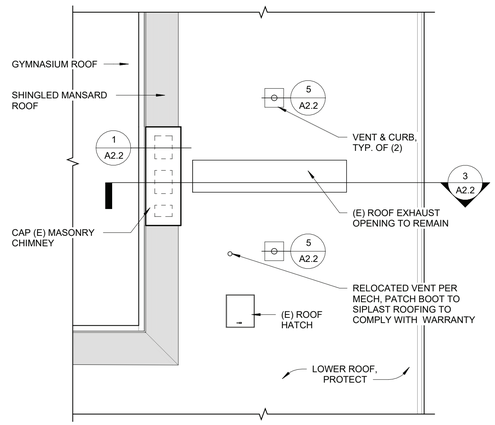
A2.1



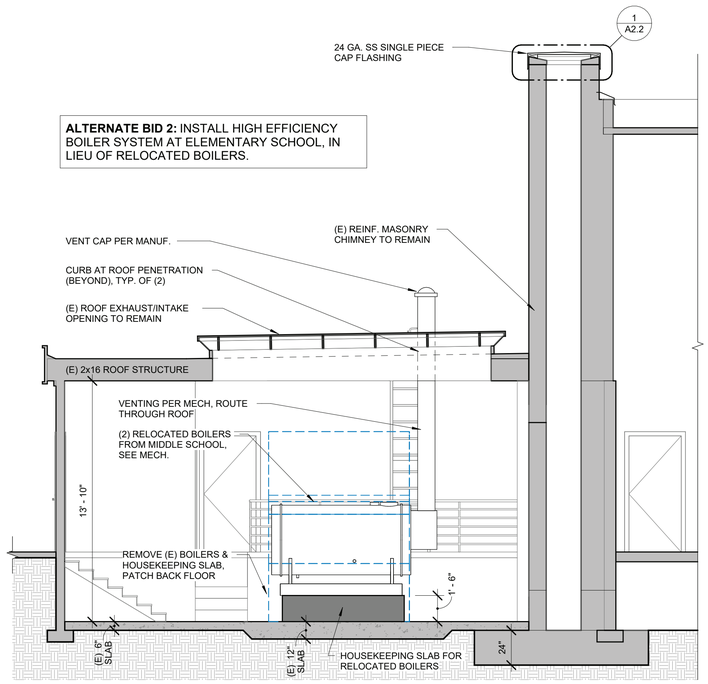
5 ROOF VENT CURB
1 1/2" = 1'-0"



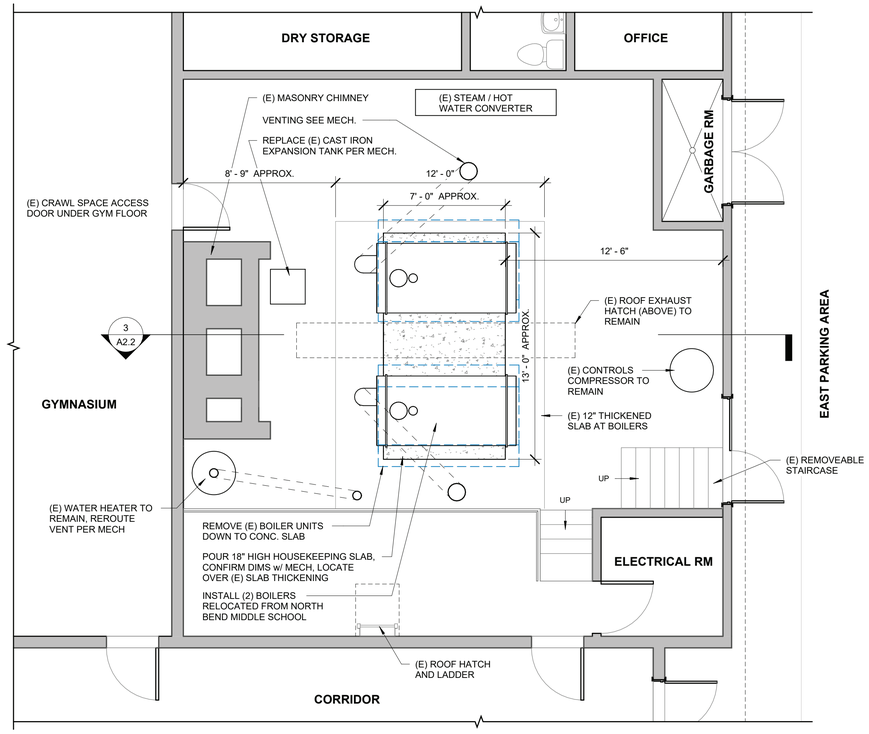
1 CHIMNEY VENT CAP
1 1/2" = 1'-0"



4 ROOF PLAN - NORTH BAY ELEMENTARY
1/8" = 1'-0"



3 BOILER RM SECTION - NORTH BAY ELEMENTARY
1/4" = 1'-0"



2 FLOOR PLAN - NORTH BAY ELEMENTARY
1/4" = 1'-0"

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
genera@hge1.com
www.hge1.com

REGISTERED ARCHITECT 2840 JOSEPH A. SLACK COOS BAY, OREGON STATE OF OREGON

PROJECT NO.: **24.069**

NORTH BEND SCHOOL DISTRICT BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST, NORTH BEND, OR 97459

BIDDING

REVISIONS:

#	DATE	DESCRIPTION

DATE: APR 2025

SHEET TITLE:
OVERALL, DEMO, & FLOOR PLANS - ELEMENTARY

A2.2

M.1 MECHANICAL PLAN NOTES

1. CONTRACTOR TO REMOVE EXISTING HURST BOILERS (BOILERS TO BE PLACED IN SERVICE AT NORTH BAY ELEMENTARY SCHOOL SEE GENERAL NOTES AND SHEET M1.2), FLUE, STEAM PIPING, BOILER FEED TANK AND CONDENSATE PUMPS, WIRING, CONTROLS AND HEAT EXCHANGER, AND FUEL PIPING. CONTRACTOR TO RETURN CONDENSATE TANK, CONDENSATE PUMPS AND CONTROL VALVES TO OWNER.

2. CONTRACTOR TO MODIFY EXISTING HEATING WATER SUPPLY PIPING TO CONNECT NEW HEATING WATER SUPPLY PIPING FROM NEW BOILERS, REFER TO PIPING DETAIL THIS SHEET, VERIFY BOILER MANUFACTURERS PIPING RECOMMENDATIONS FOR STRAIGHT PIPE AND PRIMARY PIPING CONNECTIONS TO SECONDARY PIPING. EXTEND PIPING AS REQUIRED TO MEET BOILER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO MODIFY CHEMICAL FEED POT PER PIPING TO ACCOMMODATE EXTENDED HEATING WATER PIPING.

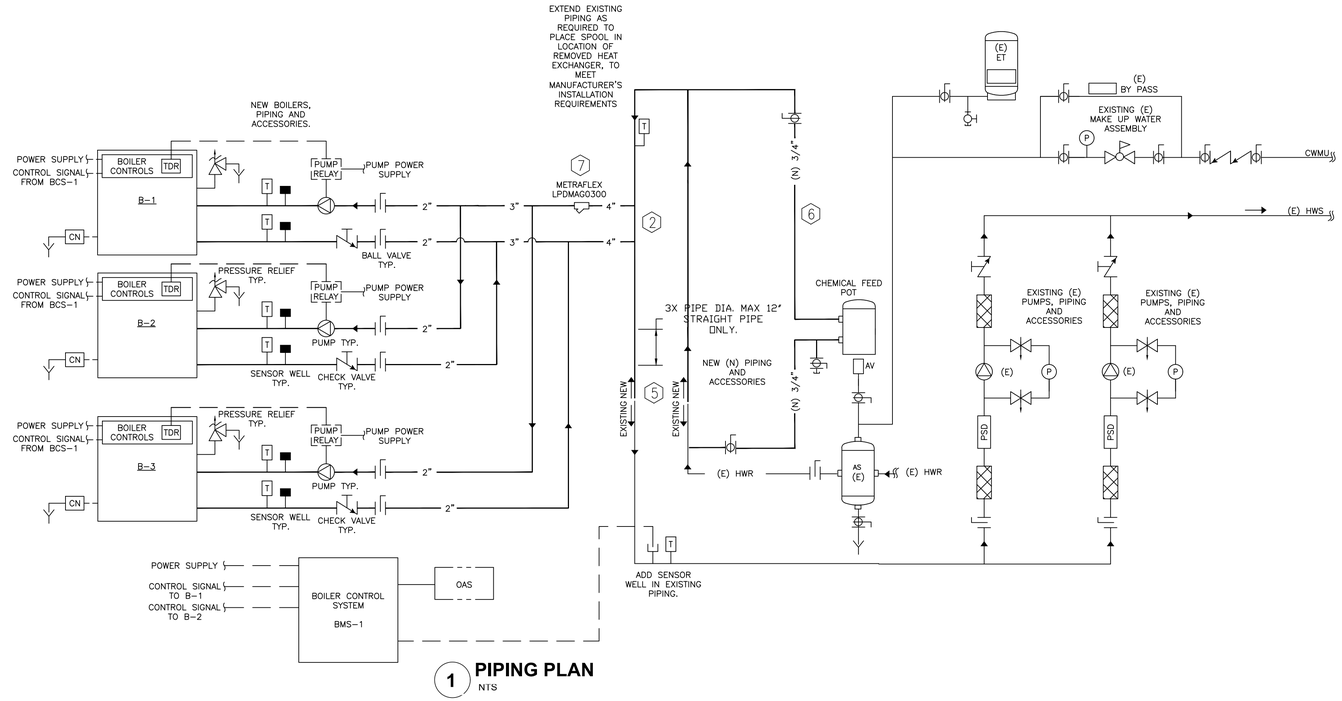
3. CONTRACTOR TO INSTALL NEW BOILERS PER SCHEDULE, SHEET M2.0, INSTALL PER MANUFACTURER AND DETAILS. LOCATE BOILERS TO MAINTAIN REQUIRED CLEARANCES. PROVIDE 6" SCHEDULE 80 CPVC BOILER FLUE FOR EACH BOILER INDEPENDENTLY, ROUTE UP THROUGH LOCATION OF REMOVED FLUE, ROUTE AND INSTALL PER BOILER MANUFACTURER. PROVIDE MANUFACTURER'S ROOF TERMINATION MINIMUM 2' ABOVE ROOF WITHIN 10', PROVIDE FLASHING AND NEW CURB CAP. PROVIDE CONDENSATE DRAIN WITH CONDENSATE NEUTRALIZING FILTER. PROVIDE CONTROLS PER GENERAL NOTES THIS SHEET. MODIFY EXISTING ELECTRICAL CIRCUITS TO SERVE NEW BOILERS AND PUMPS. BOILERS TO OPERATE IN CONDENSING MODE, WITH A BUILDING LOOP TEMPERATURE DELTA OF 40 DEGREES.

4. CONTRACTOR TO CONNECT BOILERS TO EXISTING 2LB GAS SUPPLY PIPING, PROVIDE SECONDARY REGULATOR PER BOILER MANUFACTURER, VENT TO EXTERIOR OF BUILDING.

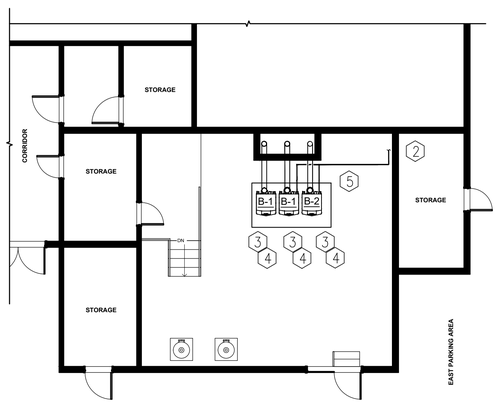
5. CONTRACTOR TO PROVIDE NEW PIPING FROM LOCATION OF REMOVED HEAT EXCHANGER TO NEW BOILERS, PER PIPING PLAN THIS SHEET AND MANUFACTURERS REQUIREMENTS.

6. CONTRACTOR TO PROVIDE BRANCH PIPING TO EXISTING CHEMICAL FEED POT.

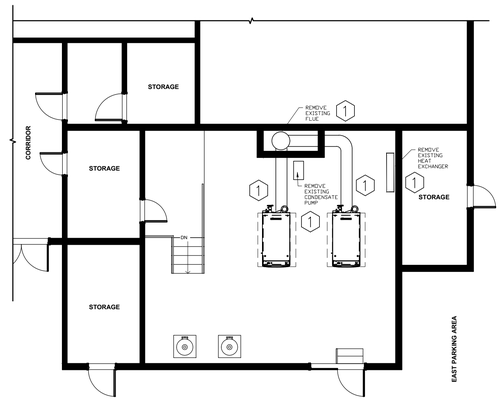
7. CONTRACTOR TO INSTALL METRAFLEX LPDMAG0300 OFCI, Y STRAINER WITH NEODYMIUM MAGNET.



1 **PIPING PLAN**
NTS



2 **MECHANICAL PLAN - NORTH BEND MIDDLE SCHOOL**
1/8" = 1'-0"



3 **MECHANICAL DEMO PLAN - NORTH BEND MIDDLE SCHOOL**
1/8" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO COMMISSION BOILER CONTROLS TO VERIFY CORRECT BOILER OPERATION. CONTRACTOR TO PROVIDE DOCUMENTATION SHOWING CORRECT OPERATION OF CONTROLS. BOILER CONTROLS TO OPERATE BOILER SET POINTS, BOILER FIRING RATES, BOILER PUMP VFD, AND LEAD LAG CONTROLS.

2. CONTRACTOR TO REMOVE EXISTING BOILERS FROM BOILER ROOM. EMPTY AND DRY BOILERS, SEAL CONNECTION POINTS. CONTRACTOR TO TRANSPORT BOILERS TO NORTH BAY ELEMENTARY SCHOOL. CONTRACTOR TO INSTALL REMOVED HURST BOILERS AT NORTH BAY ELEMENTARY SCHOOL PER SHEET M1.2.

3. INSTALL ALL COMPONENTS PER CURRENT OREGON MECHANICAL CODE, OREGON ENERGY CODE, OREGON PLUMBING CODE, MANUFACTURER'S RECOMMENDATIONS, SPECIFICATIONS AND DETAILS.

4. CONTRACTOR RESPONSIBLE FOR PROVIDING ELECTRICAL TO ACCOMMODATE NEW BOILERS, PUMPS AND CONTROLS. TYPICAL 120 VOLT 20 AMP CIRCUIT FOR EACH BOILER (2 CIRCUITS) AND 220 VOLT 20 AMP CIRCUIT FOR EACH BOILER PUMP (2 CIRCUITS).

5. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION OF PIPING. CONTRACTOR TO PROVIDE OFFSETS AND PIPE ROUTING AS REQUIRED TO INSTALL PIPING IN EXISTING SPACE AVAILABLE. CONTRACTOR TO MAINTAIN CLEAR PASSAGE BETWEEN PUMPS AND BOILERS, MINIMUM 6'6" HEAD ROOM WIDTH OF ISLE BETWEEN HOUSEKEEPING PAD AND ADJACENT WALL WITH PIPING AND ACCESSORIES.

6. CONTRACTOR TO RECEIVE, UNPACK, INSTALL, AND CONNECT ALL REQUIRED PIPING, WIRING, CONTROLS TO NEW BOILERS, BOILER PUMPS AND STRAINER. ALL COMPONENTS INCLUDING BUT NOT LIMITED TO BOILERS, PIPING, FLUES, COMBUSTION AIR, SENSOR WELLS, WIRING, GAS PIPING/REGULATORS, ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.

7. CONTRACTOR TO DOCUMENT THE EXECUTION OF BOILER MANUFACTURER START-UP AND INITIAL CHECKOUT BY THE MANUFACTURER REPRESENTATIVE AND PROVIDE A COPY TO THE OWNER.

8. DURING THE FIRST YEAR WARRANTY PERIOD, CONTRACTOR TO PROVIDE LABOR TO CORRECT DEFICIENCIES AND MAKE NECESSARY ADJUSTMENTS TO ALL INSTALLED EQUIPMENT. MAKE MODIFICAITONS TO O&M MANUALS AND RED-LINE DOCUMENTS FOR APPLICABLE ISSUES IDENTIFIED IN ANY SEASONAL OR WARRANTY PERIOD.

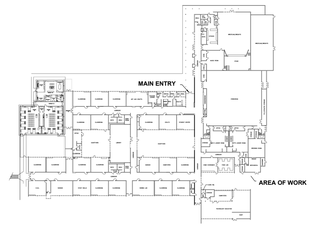
9. CONTRACTOR TO FLUSH EXISTING PIPING SYSTEM OF ANY FOREIGN MATERIAL INTRODUCED DURING BOILER AND PUMP REPLACEMENT. CONTRACTOR TO PROVIDE INITIAL WATER TREATMENT PER BOILER MANUFACTURER. INCLUDE $8,000 WATER TREATMENT ALLOWANCE IN BID.

10. CONTRACTOR TO CONNECT NEW BOILERS TO LATCHING MUSHROOM SWITCH AT EXIT FOR EMERGENCY SHUT DOWN OF ALL BOILERS.

11. CONTRACTOR TO PROVIDE FIELD VERIFICATION OF PROPER FLOW DIRECTION AND GPM THROUGH NEW VARIABLE SPEED BOILER PUMPS.

12. EXISTING FLUE TO BE REMOVED, REFER TO ARCHITECTURAL PLANS, CONTRACTOR TO PROVIDE SCHEDULE 80 CPVC 6" FLUE. FLUE TO BE INSTALLED IN STRICT CONFORMANCE TO MANUFACTURE'S REQUIREMENTS. REFER TO MANUFACTURER'S GENERAL VENTING REQUIREMENTS, DO NOT USE CELLULAR (FOAM) CORE PIPE. CONTRACTOR RESPONSIBLE FOR PROVIDING FLUE MATERIAL AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

13. CONTRACTOR TO MATCH EXISTING STEEL PIPING, PROVIDE DIELECTRIC UNIONS AT ANY DEVICE OF DISSIMILAR MATERIAL. PROVIDE INSULATION PER SPECIFICATIONS, WITH DIRECTIONAL ARROWS AND PIPE LABELS.



4 **OVERALL PLAN - NORTH BEND MIDDLE SCHOOL**
NIS

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
general@hge1.com
www.hge1.com

CBD ENGINEERING, LLC
35468 RIVERSIDE DR. SW
ALBANY, OREGON 97321
(541) 619-7287

REGISTERED PROFESSIONAL ENGINEER
61436PE
OREGON
JUNE 7, 2012
DAVID CHARLES BACHMEIER
EXPIRES: 12/31/2025

PROJECT NO.: 24.069

NORTH BEND SCHOOL DISTRICT BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST. NORTH BEND, OR 97459

BIDDING

REVISIONS:

#	DATE	DESCRIPTION

DATE: APR 2025

SHEET TITLE:
MECHANICAL PLAN - MIDDLE SCHOOL

M1.1

M1.2 MECHANICAL PLAN NOTES

1. CONTRACTOR TO REMOVE EXISTING 80 HP KEWANEE BOILERS, FLUE, STEAM PIPING TO HEADER, BOILER FEED TANK AND CONDENSATE PUMPS, WIRING, AND CONTROLS. CONTRACTOR TO RETURN CONDENSATE TANK, CONDENSATE PUMPS AND CONTROL VALVES TO OWNER. REMOVE BOILER CONCRETE PEDESTALS (3-4 FEET IN HEIGHT) TO FLOOR LEVEL.

2. CONTRACTOR TO INSTALL 70 HP HURST BOILERS FROM NORTH BEND MIDDLE SCHOOL. INSTALL ON NEW 18" CONCRETE HOUSEKEEPING PAD. PROVIDE NEW 12" SCHEBLER PA OR APPROVED FLUE ROUTE UP THROUGH ROOF MINIMUM 10 FEET FROM GYMNASIUM WALL AND EXISTING ROOF VENT, ROUTE AND INSTALL PER BOILER MANUFACTURER. PROVIDE MANUFACTURER'S ROOF TERMINATION MINIMUM 3' ABOVE ROOF WITHIN 10', PROVIDE FLASHING AND NEW CURB CAP. PROVIDE CONTROLS PER GENERAL NOTES THIS SHEET. MODIFY EXISTING ELECTRICAL CIRCUITS TO SERVE NEW BOILERS.

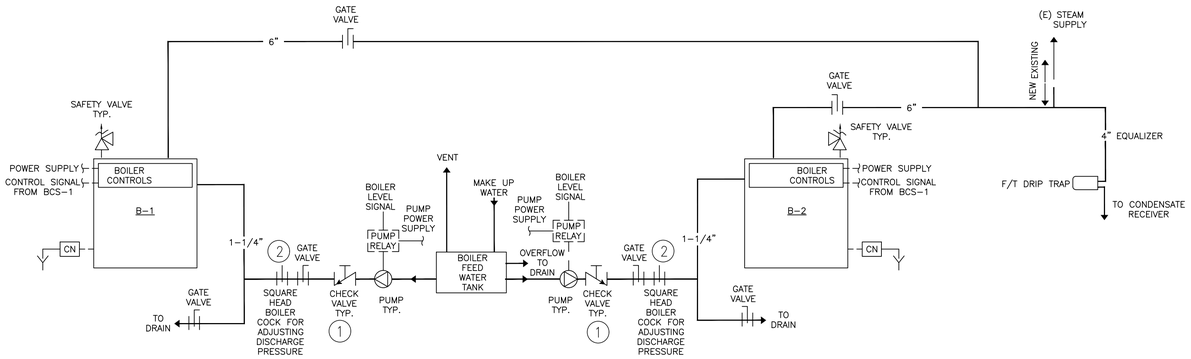
3. CONTRACTOR TO CONNECT BOILERS TO EXISTING OIL SUPPLY PIPING, TEST EXISTING PUMPS FOR REQUIRED FLOW AND PRESSURE, NOTIFY OWNER OF ANY ISSUES.

4. CONTRACTOR TO PROVIDE NEW PIPING AT BOILERS, PER PIPING PLAN THIS SHEET AND MANUFACTURERS REQUIREMENTS.

5. CONTRACTOR TO PROVIDE NEW STERLING OR APPROVED BOILER FEED PUMP WITH 100 GALLON MINIMUM CAST IRON RECEIVER WITH 9 GPM QUADRUPLEX PUMPS, MODEL TK-DMC-125-LIT. PROVIDE CONTROLS TO OPERATE PUMPS INDEPENDENTLY FOR EACH BOILER. PROVIDE ON/OFF-STANDBY CONTINUOUS SWITCHING FOR EACH PUMP. PIPE CONDENSATE RECEIVER TO BOILERS PER MANUFACTURER'S RECOMMENDATIONS. THROTTLE PUMP DISCHARGE TO MATCH BOILER MAKE UP REQUIREMENTS

6. CONTRACTOR TO REMOVE EXISTING WATER HEATER FLUE, ROUTE UP THROUGH ROOF 10 FEET FROM GYMNASIUM WALL, EXTEND 3 FEET ABOVE ROOF, TERMINATE IN FLUE MANUFACTURER'S RECOMMENDED CAP. PROVIDE ROOF JACK PER ROOFING MANUFACTURER.

CONTRACTOR TO CONNECT BOILER PIPING PER MANUFACTURER'S PIPING DIAGRAMS AND RECOMMENDATIONS



4 PIPING PLAN
NTS

PIPING NOTES;

1. INSTALL A SPRING LOADED CHECK VALVE AFTER THE PUMP.
2. INSTALL A SQUARE HEAD COCK WITH REMOVABLE HANDLE AFTER THE CHECK VALVE. ADJUST THIS FOR FEED RATES, TO MATCH BOILER NEEDS.
3. STEAM SUPPLY CONNECTION TO BE AFTER BOILER CONNECTIONS AND BEFORE THE DRIP LINE.
4. PROVIDE MAKE UP WATER TO NEW BOILER FEED WATER TANK PER EQUIPMENT MANUFACTURER.
5. PROVIDE OVERFLOW DRAIN TO FLOOR DRAIN PER EQUIPMENT MANUFACTURER.

CONTRACTOR TO REVIEW INSTALLATION REQUIREMENTS OF BOILER MANUFACTURER AND BOILER FEED WATER EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION OF EQUIPMENT. VERIFY PIPING REQUIREMENTS WITH BOILER MANUFACTURER PRIOR TO INSTALLATION.

GENERAL NOTES

1. CONTRACTOR TO COMMISSION BOILER CONTROLS TO VERIFY CORRECT BOILER OPERATION. CONTRACTOR TO PROVIDE DOCUMENTATION SHOWING CORRECT OPERATION OF CONTROLS. BOILER CONTROLS TO OPERATE BOILER SET POINTS, BOILER FIRING RATES, AND LEAD LAG CONTROLS.

2. CONTRACTOR TO REMOVE EXISTING BOILERS FROM BOILER ROOM. DISPOSE OF OFFSITE.

3. INSTALL ALL COMPONENTS PER CURRENT OREGON MECHANICAL CODE, OREGON ENERGY CODE, OREGON PLUMBING CODE, MANUFACTURER'S RECOMMENDATIONS, SPECIFICATIONS AND DETAILS.

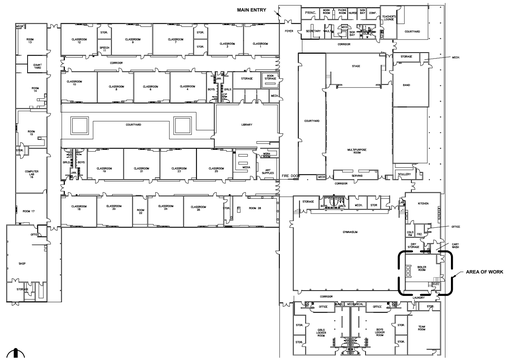
4. CONTRACTOR RESPONSIBLE FOR PROVIDING ELECTRICAL TO ACCOMMODATE NEW BOILERS, PUMPS AND CONTROLS. TYPICAL 120 VOLT 20 AMP CIRCUIT FOR EACH BOILER (2 CIRCUITS) AND 220 VOLT 20 AMP CIRCUIT FOR EACH BOILER CONDENSATE RETURN PUMP (2 CIRCUITS, COORDINATE WITH EQUIPMENT PRIOR TO ELECTRICAL ROUGH IN).

5. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION OF PIPING. CONTRACTOR TO PROVIDE OFFSETS AND PIPE ROUTING AS REQUIRED TO INSTALL PIPING IN EXISTING SPACE AVAILABLE. CONTRACTOR TO MAINTAIN CLEAR PASSAGE BETWEEN PUMPS AND BOILERS, MINIMUM 6'6" HEAD ROOM WIDTH OF ISLE BETWEEN HOUSEKEEPING PAD AND ADJACENT WALL WITH PIPING AND ACCESSORIES.

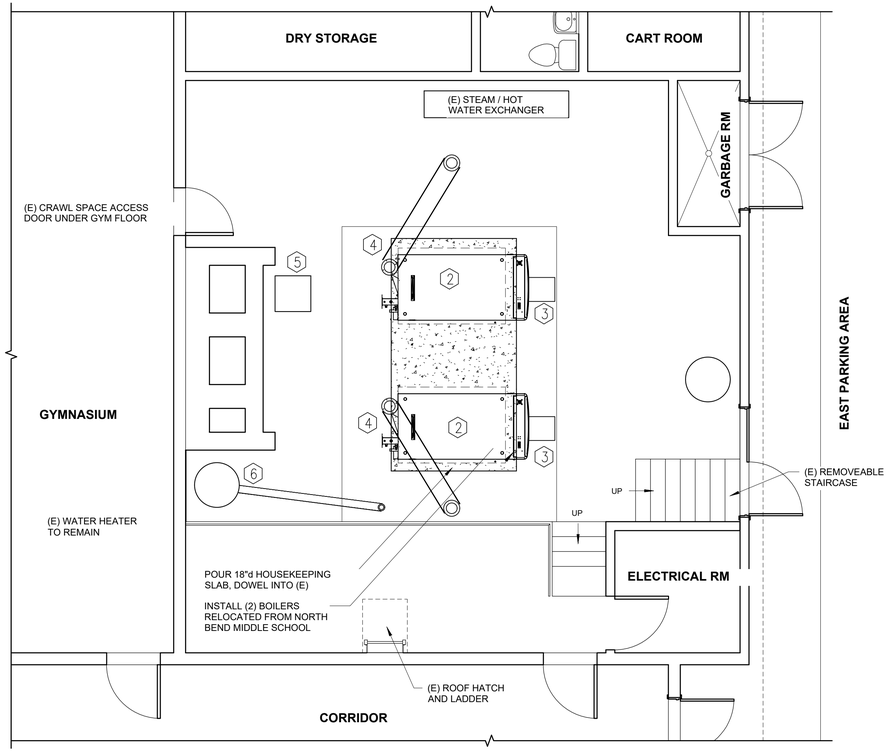
6. CONTRACTOR TO MATCH EXISTING STEEL PIPING, PROVIDE DIELECTRIC UNIONS AT ANY DEVICE OF DISSIMILAR MATERIAL. PROVIDE INSULATION PER SPECIFICATIONS, WITH DIRECTIONAL ARROWS AND PIPE LABELS.

7. CONTRACTOR TO CONNECT NEW BOILERS TO LATCHING MUSHROOM SWITCH AT EXIT FOR EMERGENCY SHUT DOWN OF ALL BOILERS.

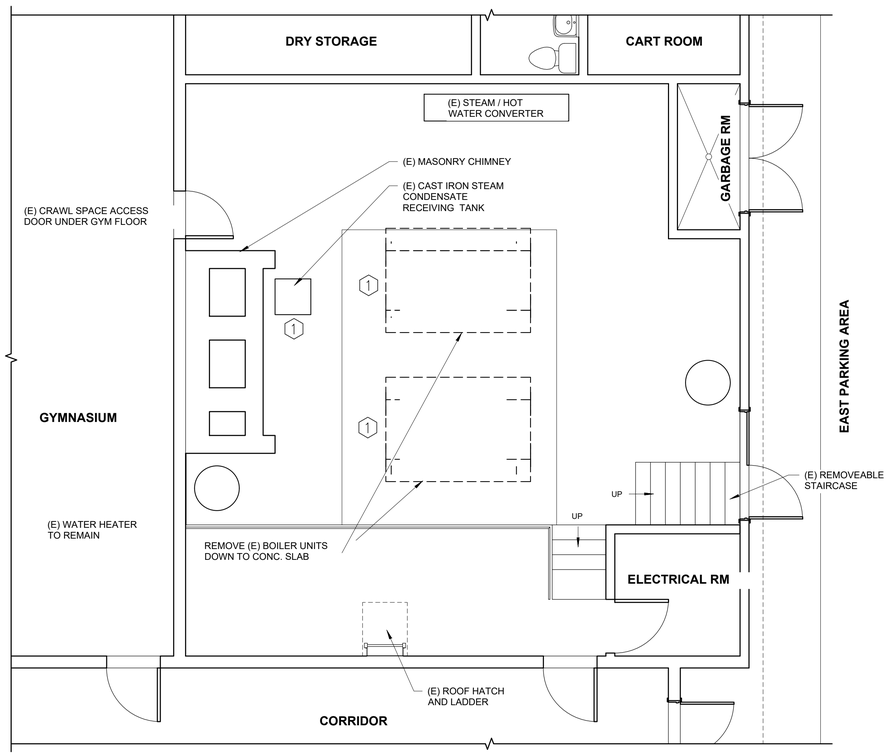
8. EXISTING FLUE TO BE REMOVED, REFER TO ARCHITECTURAL PLANS, CONTRACTOR TO PROVIDE NEW 12" FLUE. FLUE TO BE INSTALLED IN STRICT CONFORMANCE TO MANUFACTURE'S REQUIREMENTS. REFER TO MANUFACTURER'S GENERAL VENTING REQUIREMENTS, CONTRACTOR RESPONSIBLE FOR PROVIDING FLUE MATERIAL AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.



1 OVERALL PLAN - NORTH BAY ELEMENTARY
1/32" = 1'-0"



3 MECHANICAL FLOOR PLAN - NORTH BAY ELEMENTARY
1/4" = 1'-0"



2 DEMO MECHANICAL PLAN - NORTH BAY ELEMENTARY
1/4" = 1'-0"

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
general@hge1.com
www.hge1.com

CBD ENGINEERING, LLC
35468 RIVERSIDE DR. SW
ALBANY, OREGON 97321
(541) 619-7287

REGISTERED PROFESSIONAL ENGINEER
61436PE
OREGON
JUNE 7, 2012
DAVID CHARLES BACHMEIER
EXPIRES: 12/31/2025

PROJECT NO.: 24.069

NORTH BEND SCHOOL DISTRICT BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST, NORTH BEND, OR 97459

BIDDING

REVISIONS:

#	DATE	DESCRIPTION

DATE: APR 2025

SHEET TITLE:
OVERALL, DEMO, & HVAC PLANS - ELEMENTARY

M1.2

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. This section details the general requirements for the Division 23 contractor for the installation of the mechanical equipment and systems described in the Contract Documents.
B. Division 23 contractor to provide labor, materials for a complete and operable system complying to all the conditions in the Contract Documents.
C. Drawings are diagrammatic only, to show general arrangement of mechanical equipment and accessories. Coordinate location of all mechanical equipment with other trades prior to rough in. Provide necessary offsets or transitions as required to install the system in the space provided.
D. Provide all required accessories for a complete and operable system as intended, review all manufacturer installation requirements prior to rough in. Notify engineer of any conflict between manufacturer's requirements and Contract Documents prior to proceeding with installation.
E. Contractor to verify all installation requirements prior to ordering of equipment. Verify correct voltage, amperage, physical size, mounting, and access requirements prior to ordering. Notify engineer of discrepancies prior to ordering.
F. Contractor to provide all required transitions from pipe size shown to unit connections. Contractor to provide flexible connections at mechanical equipment per Contract Documents.
G. Contractor to submit for and obtain all permits required to perform the work as described. Contractor is responsible for the payment of the permits and coordination of all inspections required by the local authority having jurisdiction.
H. Contractor to install all equipment and accessories in a professional manner, run piping and duct work parallel to the building, install equipment plumb and level, with adequate access for maintenance. Provide permanent plastic laminate labels with equipment identification matching Contract Documents.
I. Contractor to provide seismic restraints for all equipment as required by the AHJ. Provide stamped structural calculations as required and submit to the AHJ as requested for approval. Provide all special inspections as required by the AHJ.
J. It is the Contractor's responsibility to satisfy himself as to the nature and location of the work, the general conditions, availability of labor, water, electric power, roads, physical conditions at the site, the existing equipment to remain, existing equipment to be modified or to be removed, and all other matters which can in any way affect the work or the cost thereof under this contract. Any failure by the Contractor to acquaint himself with all available information will not relieve him of responsibility of successfully performing the work.

1.2 DEFINITIONS

A. Provide means furnish and install, complete, with the specified material or equipment and perform all required labor to make a complete and functioning installation.
B. Install means to provide labor and materials to receive, unload, assemble, place, mount, seismically brace, connect to all required services, clean, start-up, adjust and commission.
C. Clean means to remove all debris, to wash cabinet inside and out with applicable cleaning solution, chemically clean coils as required to remove trapped dirt, comb coils straight after cleaning, remove all dirt and debris from fan blades, provide new filters, acid flush coils to remove sediment, flush out piping systems until discharge is clear, remove sediment from all strainers and lubricate and place back in service when completed.
D. Service means to clean equipment, lubricate equipment per manufacturer, replace belts, replace sheaves (as required), replace filters, cycle all dampers/actuators, tighten/adjust all linkage, run equipment through all cycles and verify correct operation. Provide documentation of recorded inputs/outputs after servicing.
E. AHJ Authority Having Jurisdiction.

1.3 OPERATION AND MAINTENANCE MANUALS (O&M)

A. O&M manuals to include submitted information.
B. Manufacturer's factory start up forms completed as required for warranty. Warranty information for all equipment.
C. Equipment suppliers contact information.
D. Equipment service requirements and spare parts list.
E. Material Safety Data Sheets on all chemicals provided on the project.
F. Reports.
1. Compliance with listings and approvals for equipment and for fire ratings.
2. Acceptance certificates from inspecting agencies.
3. Laboratory water tests.
4. Manufacturer's performance tests on operating equipment.
5. Field pipe pressure testing reports.
6. Field operating test results for operating equipment.
7. Performance report on the balancing of hydronic system.
8. Performance reports for vibration isolation equipment.
G. Record drawings showing all significant changes to the Contract Documents. Location of all valves and mechanical equipment access.

1.4 ACCESSIBILITY

A. Contractor is to provide manufacturer's minimum access for all equipment provided.
B. Contractor to provide adequate access to all valves, test ports, manual vents, gauges and controls for all equipment.
C. Contractor responsible to coordinate installation of all panels, ceilings, doors for adequate access.
D. Contractor responsible to maintain all access paths to new or existing equipment, and locating piping and ductwork out of access paths.

INSULATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Insulation for the following applications:
1. Pipes and accessories

1.2 REFERENCES

A. Independent Listing Agency References:
1. Underwriters Laboratories (UL).
2. International Code Council - Engineering Service (ICC-ES).
3. Intertek Testing Service (ITS) - Label Mark is OPL.
B. Building Code References:
1. 2022 Oregon Mechanical Specialty Code
2. 2025 Oregon Energy Efficiency Specialty Code (ASHRAE 90.1-2022)
3. 2023 Oregon Plumbing Specialty Code
4. International Code Council (ICC).

1.3 SYSTEM

A. Work of this section includes labor, material, methods, and equipment to insulate the piping systems scheduled or indicated.

1.4 SUBMITTALS

A. Product data: To include product description, manufacturer's installation instructions, types and recommended thicknesses for each application, and location of materials.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Submit UL and/or Intertek Testing Service (ITS) Listings.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Installation methods.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar products.
B. Installer Qualifications: Minimum 2 years experience installing similar products.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.
B. Deliver materials in original sealed packages, clearly labeled with manufacturing information, including product identification and manufacturing lot numbers.
C. Store material out of weather and away from incidental damage.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.1 CLOSED CELL ELASTOMERIC PIPE INSULATION

A. Flexible, expanded closed-cell, unslit, black with a flame spread meeting ASTM E84, 0.255 Btu-in/hr-sf-degFthermalconductivity (ASTM C177-71), 5.0 lbs/cf density. 1/2" minimum thickness.
B. Approved Product:
1. Armacell Pipe Insulation or approved.

2.2 HEAT PUMP LOOP PIPING

A. MATCH EXISTING MATERIALS
B. PROVIDE DIELECTRIC UNIONS AT ALL EQUIPMENT CONNECTIONS, WHERE EQUIPMENT CONTAINS MATERIAL DIFFERENT FROM PIPING SYSTEM.

PART 3 - EXECUTIONS

3.1 EXAMINATION

A. Verify that all piping is tested and approved prior to insulation installation.
B. Verify that all surfaces are clean, dry and without foreign material before applying insulation materials.
C. Do not insulate over name plates, valve actuators.

3.2 INSTALLATION

A. All materials shall be installed by skilled labor regularly engaged in this type of work. All materials shall be installed in strict accordance with manufacturer's recommendations, building codes, and industry standards.
B. Pipe insulation is to be continuous, insulation to cover all valve bodies and fittings. Insulation to be installed under pipe hangers not over, provide metal shields to protect insulation at hangers.
C. All hydronic piping to be insulated with insulation per table 6.8.3-1 ASHRAE 90.1 2019.
D. Provide 20 mil UV resistant PVC cover jacket on any exterior insulation, exposed in public spaces or accessible to damage by personnel.

3.3 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

EQUIPMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. HVAC heating equipment including the following:
1. Boilers
2. Pumps

1.2 RELATED SECTIONS

A. Division 01, Division 26, Supplementary Conditions and Contract Drawings.

1.3 REFERENCES

A. American National Standards Institute (ANSI).
B. National Electrical Manufacturers Association (NEMA) MG-1 - Motors and Generators.
C. National Electrical Manufacturers Association (NEMA) 56C - Frame Sizes and Configurations.
D. Underwriters Laboratory (UL).

1.4 SUBMITTALS

A. Product Data: Provide product data for manufactured products and assemblies required for this project. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description, model and dimensions:
1. Provide complete literature for all components of packaged equipment. These include performance, heat exchanger calculations, data for all accessories and valves and complete wiring diagrams specific to the exact unit to be supplied. The wiring diagram shall indicate all required field and factory wiring
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.
5. Equipment shown on schedules.
6. Controls.
B. Seismic calculations from Oregon State Licensed Professional Engineer for all equipment required by AHJ.
C. Project Record Documents.
D. Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum five years of documented experience.
B. Installer Qualifications: Minimum 2 years experience installing similar systems.
C. Product Qualifications:
1. Where items of equipment are required to be provided with compliance to U.L., A.G.A., or other testing and approving agencies, the Contractor may submit a written certification from any nationally recognized testing agency, adequately equipped and competent to perform such services, that the item of equipment has been tested and conforms to the same method of test as the listed agency would conduct.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.
1. Accept equipment on site in shipping containers with labeling in place. Inspect for damage.
2. Provide temporary end caps and closures on duct work, piping and fittings. Maintain in place until installation.
3. Protect piping and duct work components from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.
B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. The contractor shall guarantee system operation for one full year.

PART 2 - PRODUCTS

2.1 EQUIPMENT.

A. Refer to notes on Sheets.
B. Other approved manufacturers; approved by substitution request only.

PART 3 - EXECUTIONS

3.1 INSTALLATION

A. Equipment.
1. Install in strict conformance to manufacturer's installation requirements. Notify engineer of any conflicts between manufacturer's installation requirements and Contract Documents prior to installation.
2. Contractor responsible for providing all service access requirements and meeting all code access requirements. Maintain clearances free from all ducts, piping and electrical.

3.2 START UP

A. Complete all factory startup forms and warranty forms. Provide documentation in O&M manuals.

3.3 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

BOILER SCHEDULE

UNIT NUMBER	LOCATION	SERVICE	BOILER TYPE	INPUT (BTUH)	AHRI EFFICIENCY (BTS-2000) (%)	WATER DATA					BURNER DATA			ELECTRICAL DATA		DIMENSIONS L x W x H (IN)	UNIT OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL
						OPERATING PRESSURE (PSIG)	BOILER CAPACITY (GAL)	RELIEF VALVE PRESSURE (PSIG)	BOILER PRESSURE RATING (PSIG)	PUMP	FUEL	GAS INPUT (CFH)	MIN-MAX GAS INLET PRESSURE (IN W.C.)	VOLT/PHASE/HZ	FLA				
B-1,B-2, B-3	BOILER ROOM	HEATING	CONDENSING BOILER	999,000	98.3	30	19	50	160	B&G XL20-140	NATURAL GAS	999,000	4 – 14	120/1/60	12	26x26x61	750	LOCHINVAR	FTX1000

NOTES:
1. PROVIDE MANUFACTURER'S CONTROLS FOR LEAD/LAG, VFD BOILER PUMP CONTROLS, OSA RESET.
2. MINIMUM TURNDOWN: 10:1
3. PROVIDE WITH CONDENSATE NEUTRALIZER KIT
4. BOILER SHALL BE CAPABLE OF UTLIZING NON-METALLIC VENT MATERIAL
5. ROOM AIR KIT WITH FILTER FOR COMBUSTION AIR INTAKE, DRAWN FROM BOILER ROOM.

HGE ARCHITECTS
333 S. 4TH STREET
COOS BAY, OR 97420
P: 541.269.1166
general@hge1.com
www.hge1.com

CBD ENGINEERING, LLC
35468 RIVERSIDE DR. SW
ALBANY, OREGON 97321
(541) 619-7287

REGISTERED PROFESSIONAL ENGINEER
61436PE
OREGON
JUNE 7, 2012
DAVID CHARLES BACHMEIER
EXPIRES: 12/31/2025

PROJECT NO.: **24.069**

NORTH BEND SCHOOL DISTRICT
BOILER REPLACEMENT

NORTH BAY ELEMENTARY - 93670 VIKING LANE #1, NORTH BEND, OR 97459
NORTH BEND MIDDLE SCHOOL - 1500 16TH ST, NORTH BEND, OR 97459

BIDDING

REVISIONS:

#	DATE	DESCRIPTION

DATE: APR 2025

SHEET TITLE:

SCHEDULES AND SPECS.

M2.0